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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/461,625	12/14/1999	JOHN I. GARNEY	2207/7562	4071

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EXAMINER

PHILPOTT, JUSTIN M

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/461,625

Applicant(s)

GARNEY ET AL.

Examiner

Justin M Philpott

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-21, 23-31 and 33-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-21, 23-31 and 33-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 22, 2003 has been entered.

Response to Amendment

2. In the Amendment filed on September 22, 2003, applicant has amended the specification and provided corrected drawings; accordingly, the specification and the drawings are no longer objected to. Applicant has also canceled claims 1, 22 and 32, and has added new independent claims 42-44 comprising further limitations of the canceled claims 1, 22 and 32 in an attempt to overcome the previous prior art rejections.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 2-4, 23-25, 42 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,012,115 to Chambers et al.

Regarding claims 42 and 43, Chambers teaches a system (e.g., see FIG. 1 and col. 2, line 19 – col. 10, line 7) comprising a host controller (e.g., 110), a device driver (e.g., within processor 102) adapted to operate the host controller to initiate and perform a first transaction (e.g., start of a frame pulse transmitted from host controller, see col. 2, lines 30-47) at a first time (e.g., 308, see FIG. 3B) between the host controller (e.g., 110) and a hub (e.g., 111, inherently coupling devices 112, 114, 116 to controller 110) and to initiate and repeat the first transaction at a second time (e.g., 311) between the host controller (e.g., 110) and the hub (e.g., 111, inherently coupling devices 112, 114, 116 to controller 110); wherein the hub (e.g., 111) is adapted to perform a second transaction (e.g., measuring time between an event and pulses, see col. 2, lines 35-47) with an agent (e.g., within a peripheral device 112, 114, 116) based upon the first transaction at the first time (e.g., frame pulse); and wherein the first transaction at the second time (e.g., 311) is repeated after the second transaction (e.g., after time is measured, see FIG. 3B).

Regarding claims 2, 3, 23 and 24, the first/second transactions are inherently performed at first/second communication speeds or in accordance with first/second protocols.

Regarding claims 4 and 25, Chambers teaches performing a third transaction (e.g., predetermined response to an event, see col. 2, lines 35-47) between the first transaction at the first time and the first transaction at the second time.

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5. Claims 33-36, 38, 39, 41 and 44 are rejected under 35 U.S.C. 102(e) as being unpatentable over U.S. Patent No. 6,145,039 to Ajanovic et al.

Regarding claim 44, Ajanovic teaches a method for communicating data between a host (CPU 208, in FIG. 2) and an agent (peripheral device 218, 220, 222, 224 or PCI agents 214) wherein the method comprises performing a first transaction at a first time (request packet on hub link 202, col. 2, line 64 and col. 5, lines 52-60; see also "Request" of first transaction 304 at first time in FIG. 3) between a host controller (204) and a hub (206), performing a second transaction (col. 5, line 62 – col. 6, line 13 regarding request signal of an arbitration protocol; see also "Arbitration" of second transaction 306 in FIG. 3) between the hub (I/O hub) and an agent (peripheral device) based on the first transaction at the first time, and performing the first transaction at a second time (Completion packet, col. 2, line 65; see also "Completion" of first transaction 308 at second time) between the host controller (204) and the hub (206).

Further, Ajanovic teaches an embodiment (FIG. 4) comprising a first hub controller (within I/O Hub 206, coupled to host controller 204 as in FIG. 2 previously discussed) for initiating and performing the first transactions and a second hub controller (within 2nd I/O Hub in FIG. 4) coupled to the first hub controller and adapted to perform a second transaction with an agent (wherein 2nd I/O Hub functions as I/O Hub 206 of FIG. 2 which is coupled to peripherals 218, 220, 222, 224).

Regarding claims 33 and 34, Ajanovic teaches the first transactions at first and second times are performed in accordance with a first split-transaction protocol (col. 2, lines 62-64) and the second transaction is performed in accordance with a second protocol (arbitration protocol, col. 5, line 63).

Regarding claim 35, Ajanovic teaches the method of claim 1 further comprising performing a third transaction between the first transaction at the first time and the first transaction at the second time (col. 3, lines 10-14).

Regarding claims 36 and 39, Ajanovic teaches wherein performing the first transaction at first and second times includes sending from the host controller to the hub a first token packet (see transaction layer, col. 3, lines 61 – col. 4, line 65) including agent identification information (col. 4, lines 55-56) and a transfer indicator (transaction descriptors, col. 3, line 66 – col. 4, line 2) indicating that data needs to be transferred between the host controller and the hub, and transferring a data packet between the host controller and the hub (col. 4, line 2 and also col. 5, lines 23-49).

Regarding claims 38 and 41, Ajanovic teaches sending a data packet from the host controller to the hub during the first transaction at the first time, and sending a data packet from the hub to the host controller during the first transaction at the second time (col. 3, line 61 – col. 4, line 65; see also “Data” of first transaction at first time 304 and first transaction at second time 308 in FIG. 3).

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 5, 7, 8, 10, 26, 28, 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers in view of Ajanovic.

Regarding claims 5, 8, 26 and 29, Chambers teaches the system discussed above regarding claim 42, however, may not specifically disclose sending a token packet including agent identification information and a transfer indicator.

Ajanovic teaches a method for communicating data between a host (CPU 208, in FIG. 2) and an agent (peripheral device 218, 220, 222, 224 or PCI agents 214), as discussed above regarding claim 44. Further, Ajanovic teaches wherein performing the first transaction at first and second times includes sending from the host controller to the hub a first token packet (see transaction layer, col. 3, lines 61 – col. 4, line 65) including agent identification information (col. 4, lines 55-56) and a transfer indicator (transaction descriptors, col. 3, line 66 – col. 4, line 2) indicating that data needs to be transferred between the host controller and the hub, and transferring a data packet between the host controller and the hub (col. 4, line 2 and also col. 5, lines 23-49). The teachings of Ajanovic provide an improved interface between computer components whereby a hub link provides connections for narrow and high bandwidth peripherals (e.g., see col. 2, lines 17-21). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Ajanovic to the system of Chambers in order to provide an improved interface between computer components whereby a hub link provides connections for both narrow and high bandwidth peripherals (e.g., see col. 2, lines 17-21).

Regarding claims 7, 10, 28 and 31, Ajanovic teaches sending a data packet from the host controller to the hub during the first transaction at the first time, and sending a data packet from the hub to the host controller during the first transaction at the second time (col. 3, line 61 – col.

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4, line 65; see also "Data" of first transaction at first time 304 and first transaction at second time 308 in FIG. 3).

8. Claims 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ajanovic.

Regarding claims 11-15, 20 and 21, Ajanovic teaches the method of claim 44 as discussed above as well as teaches a first period of a frame template (comprising packet 304; see FIG. 3), however, may not specifically disclose performing the second period of a frame template (comprising packet 308) in a period that is less than or equal to half of the first period, nor may Ajanovic specifically disclose the template period being particularly greater than or less than the duration of one frame. However, Ajanovic does not limit the first, second, and template periods to a specific size in FIG. 3 by using a clock signal having discontinuities. That is, in the configuration of FIG. 3, the first, second, and template periods may vary in size.

Moreover, it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on Appellant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to perform the second period of a frame template in a period that is less than or equal to half of the first period, and/or wherein the template period is particularly

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greater than or less than the duration of one frame, since it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the parameters or values of any system absent a showing of criticality in a particular recited value.

Regarding claims 16-19, Ajanovic teaches the first frame template comprises packet 304 and the second frame template comprises packet 308. Furthermore, Ajanovic teaches the first and second frame templates are displaced from each other by a time interval (e.g., see FIG. 3).

9. Claims 37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ajanovic in view of U.S. Patent No. 6,389,029 to McAlear.

Regarding claims 37 and 40, Ajanovic teaches the methods of claims 36 and 39 as discussed above, however, may not specifically disclose during the first transaction processing by the host controller at least one of an acknowledgement, a handshake indication, or a timeout indication.

McAlear teaches a network incorporating universal serial bus protocol and discloses that it is known in the art of USB device communications to process an acknowledgement (ACK), a negative handshake acknowledgement (NAK), and a timeout (Stall handshake) during data packet transfer in order to provide efficient communications (col. 5, lines 23-33). Ajanovic specifically discloses USB communications (col. 4, line 57), and thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to include processing an acknowledgement, a handshake indication, or a timeout indication during data packet transfers in order to provide efficient communications.

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10. Claims 6, 9, 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers in view of Ajanovic, further in view of McAlear.

Regarding claims 6, 9, 27 and 30, Chambers in view of Ajanovic teach the methods of claims 5, 8, 26 and 29 as discussed above, however, may not specifically disclose during the first transaction processing by the host controller at least one of an acknowledgement, a handshake indication, or a timeout indication.

McAlear teaches a network incorporating universal serial bus protocol and discloses that it is known in the art of USB device communications to process an acknowledgement (ACK), a negative handshake acknowledgement (NAK), and a timeout (Stall handshake) during data packet transfer in order to provide efficient communications (col. 5, lines 23-33). Ajanovic specifically discloses USB communications (col. 4, line 57), and thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to include processing an acknowledgement, a handshake indication, or a timeout indication during data packet transfers in the system of Chambers in view of Ajanovic in order to provide efficient communications.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9314.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.305.4750.



Justin M Philpott



HUY D. VU
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